WHAT IS CLAIMED IS:

1. A swash plate compressor comprising:

a housing;

a rotatable main shaft extending in said housing;

a swash plate mounted on said shaft and rotatable together with said shaft; and

a compressor unit adapted to carry out a suction process and a compression process for a working fluid as the swash plate rotates,

said compressor unit including a plurality of pistons arranged adjacent to one another in the rotating direction of said swash plate and adapted to reciprocate in an axial direction of said shaft as said swash plate rotates, and a plurality of cylinder bores capable of individually receiving the corresponding pistons and guiding the pistons in reciprocation,

each said cylinder bore having a cross section formed of any other closed curve than a circle,

the closed curve including curve elements and straight elements, each of the straight elements connecting each two adjacent curve elements.

2. The compressor according to claim 1, wherein said closed curve is triangular and includes a first curve element defining a base extending in a rotating direction of said swash plate and a second curve element defining a top directed inward in a diametrical direction of said swash plate and having a curvature radius smaller than that of the first curve element.

3. The compressor according to claim 2, wherein said closed curve further includes third curve elements connecting with ends of the first curve element and having a curvature radius smaller than that of the second curve element, the straight elements connecting the corresponding

third curve element and the second curve element, respectively.

4. The compressor according to claim 1, wherein said closed curve is oval and includes a first curve element defining a large end portion situated ahead as viewed in a rotating direction of said swash plate, a second curve element defining a small end portion situated behind as viewed in the rotating direction and having a curvature radius smaller than that of the first curve element, and two straight elements connecting the first and second curve elements.

5. The compressor according to claim 1, wherein said compression unit includes a cylindrical outer shell, a metallic center sleeve located in a center of the outer shell and supporting said main shaft by means of a bearing, metallic intermediate sleeves arranged between the outer shell and the center sleeve and individually defining said cylinder bores inside, and a resin filler filling gaps in the outer shell.

6. The compressor according to claim 5, wherein said cylinder bores are formed by plastically deforming the intermediate sleeves.

7. The compressor according to claim 1, wherein each said piston includes a cylindrical piston body having an inner end situated in each corresponding cylinder bore, a piston head mounted on the inner end of the piston body, and a piston ring mounted on the piston body, the piston head and the piston ring having a cross-sectional shape in conformity with the cross section of the cylinder bore so that only the piston head and the piston ring are slidably in contact with the cylinder bore as the piston is fitted in the bore.

8. The compressor according to claim 7, wherein said

piston head and said piston ring each includes a metallic ring portion surrounding the outer periphery of the piston body and a seal ring surrounding an outer periphery of the ring portion, the seal ring being formed of a synthetic resin and elastically deformable.

9. The compressor according to claim 8, wherein said piston body is a hollow structure opening at the inner end thereof, and said piston head has a cap portion closing the inner end and a rim connecting with the cap portion and serving as the ring portion.

10. The compressor according to claim 8, wherein said ring portion has a slit extending in an axial direction of said piston and crossing the ring portion.

11. The compressor according to claim 10, wherein said seal ring has an outer slit extending in the axial direction of the piston and crossing the seal ring, the outer slit forming one passage in conjunction with the inner slit of the ring portion.

12. The compressor according to claim 8, wherein said seal ring has at least one circumferential groove on an outer peripheral surface thereof.